DOCUMENT RESUME

ED 263 503 CG 018 660

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TITLE Comparison of Three Methods to Reduce Student Procrastination in PSI.
PUB DATE Aug 85
NOTE 12p.; Paper presented at the Annual Convention of the American Psychological Association (93rd, Los Angeles, CA, August 23-27, 1985).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Academic Achievement; *College Students; Higher Education; Motivation Techniques; *Pacing; *Performance Contracts; Program Effectiveness; Program Improvement; Student Characteristics; Student Evaluation; *Student Motivation
IDENTIFIERS *Personalized System of Instruction; *Procrastination

ABSTRACT

While self-pacing may appear to be an ideal solution to problems stemming from individual differences in academic skill levels among college students, students in Personalized System of Instruction (PSI) courses may tend to procrastinate. Three course contingencies were studied for their effectiveness in reducing student procrastination and increasing student progress: Contracting (N=154) whereby students contracted individually with an instructor for testing days; Doomsday and Tokens (N=141) in which students were given deadlines and awarded activity credits for course work completion; and Doomsday (N=148) in which students were given a deadline for course work completion. The dependent measures included date of first testing attempt, student progress in the course, withdrawal rate, and gender distributions. The results revealed that students in the Contracting condition progressed at a faster rate than students in either the Doomsday or the Doomsday and Tokens conditions ($p<.001$), but there were no significant differences in grade distributions or success/failure rates. Withdrawal rates were higher in the Doomsday and Doomsday and Tokens conditions than in Contracting. Contracting was the most effective but also the most costly in reducing procrastination. (Author/ABB)

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A Comparison of Three Strategies to Reduce Student Procrastination in PSI

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Five hundred seventy-eight students participated in an investigation of three types of course contingencies designed to reduce student procrastination in a PSI course. Students in the "Contracting" condition progressed at a faster rate than students in either the "Doomsday" or the "Doomsday and Tokens" conditions, $p < .001$, but there were no significant differences in grade distributions, or success/failure rates. Students started test taking earlier under the "Doomsday and Token" model, $p < .10$. Withdrawal rates were higher in the "Doomsday" and "Doomsday and Token" conditions than in contracting. Contracting was the most effective but also the most costly in reducing procrastination.

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A Comparison of Three Strategies to Reduce Student Procrastination in PSI

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Of the five principles of PSI identified by Keller (1968) to maximize student learning, self-pacing has been the most controversial. At first, self-pacing appeared to be the ideal solution to problems stemming from individual differences among students in their level of academic skills. Theoretically, self-pacing provides students with the opportunity to progress at their own speed depending on their ability. Unfortunately, in practice, self-pacing has turned out to be a hazard for students enrolled in PSI courses since many of them tend to procrastinate (Mawhinney, etal, 1971).

To increase students' response rates, a variety of course contingencies have been implemented. These have included: bonus points for completing assignments early (Bufford, 1976), midterm examinations at fixed times (Witters & Kent, 1972), and unit tests on a weekly basis (Roop, 1973). Although these techniques have changed student response rate they did not show any effect on criterion tests. (Lloyd, 1971).

In our own experiences with PSI, we have attempted to maintain consistency within the PSI philosophy of course mastery. Rather than time being critical, we have used liberal policies in awarding incomplete grades. Unfortunately, the percentage of incomplete grades in our Introductory Psychology course has ranged

from a low of 29% to a high of 64%. In addition to a high incomplete rate, approximately one-half of the students requesting incompletes typically failed the following term because they did not complete the course requirements.

In order to reduce this incomplete rate and motivate students to progress at a faster rate through the course material, we have systematically investigated deadlines, bonus points, and contracting as methods to reduce student procrastination.

Method

Subjects

Approximately 150 students each quarter enroll in our Introductory Psychology course taught in the PSI format. Approximately 75-80% of the students are freshman.

Class Procedures and format

Students are awarded test points based on their level of mastery over a unit (chapter) of material. At minimum, they must receive 15 of 20 possible points to complete each unit. Grades are determined by a combination of total test points and activity credits, which can be earned for lecture, lab, or film attendance.

Selection of University terms for data analysis

Although data is available from a number of quarters, winter quarter was selected as the quarter of interest because it consists of approximately 2½ weeks of class, 2 weeks Christmas break, and 8 weeks of class. With this type of schedule, students tend to do a minimal amount of course work prior to the break.

Independent variables

Contracting. During Winter Quarter, 1982, 154 students were placed on an instructor-paced schedule for the first four weeks of the term with two deadlines: one for mastery of 3 units and another for mastery of 6 units of material. Students who did not complete 6 units by the deadline were strongly encouraged to contract with the instructor for specific testing dates. Of the 58 individuals who did not make the deadline, 34 of them set up a contract for testing days with the instructor.

Doomsday and Tokens. During Winter Quarter, 1984, the 141 students enrolled in our course were required to complete two chapters before Christmas break, and were awarded activity credits for completing course work prior to the deadline.

Doomsday. During Winter Quarter, 1985, the 148 students enrolled were required to complete two chapters by the break. The number of testing days were equal to those under the "Doomsday and Tokens" condition.

Dependent measures

The dependent measures included: date of first testing attempt, student progress in the course, withdrawal rate, and grade distributions. Student progress was measured by determining the number of units which had been completed by the sixth week of class (defined as the 27th day of the term). Data from Winter Quarter, 1983 (during which there were not contingencies) was used as a baseline for comparisons.

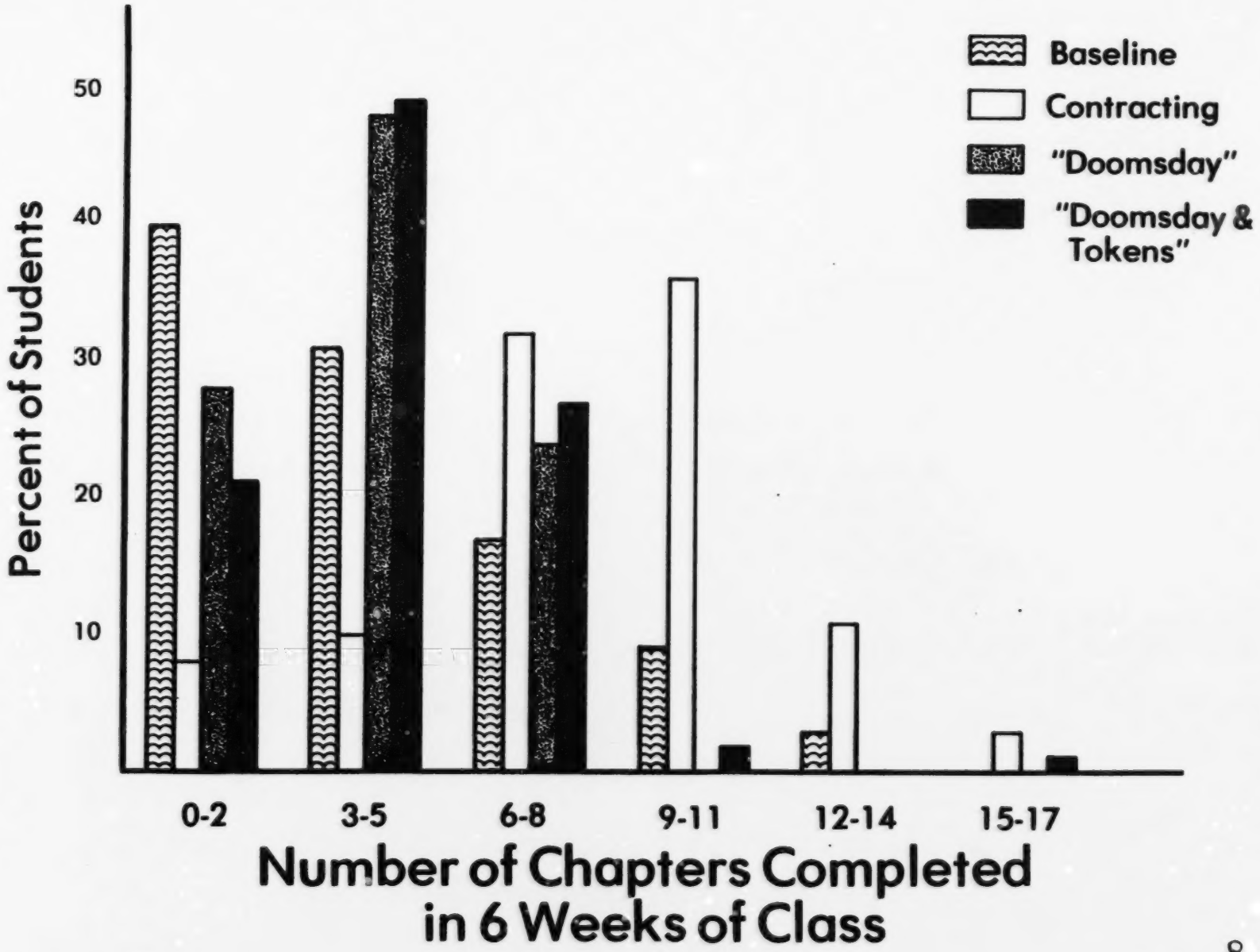
Results and Discussion

Dates of first testing attempts and student progress rates were compared using an analysis of variance. Chi-squared tests were conducted on withdrawal rates, and grade distributions. The dates of first testing attempts were similar for the Baseline, Contracting, and Doomsday conditions. The students in the Doomsday and Token condition started slightly earlier in the term.

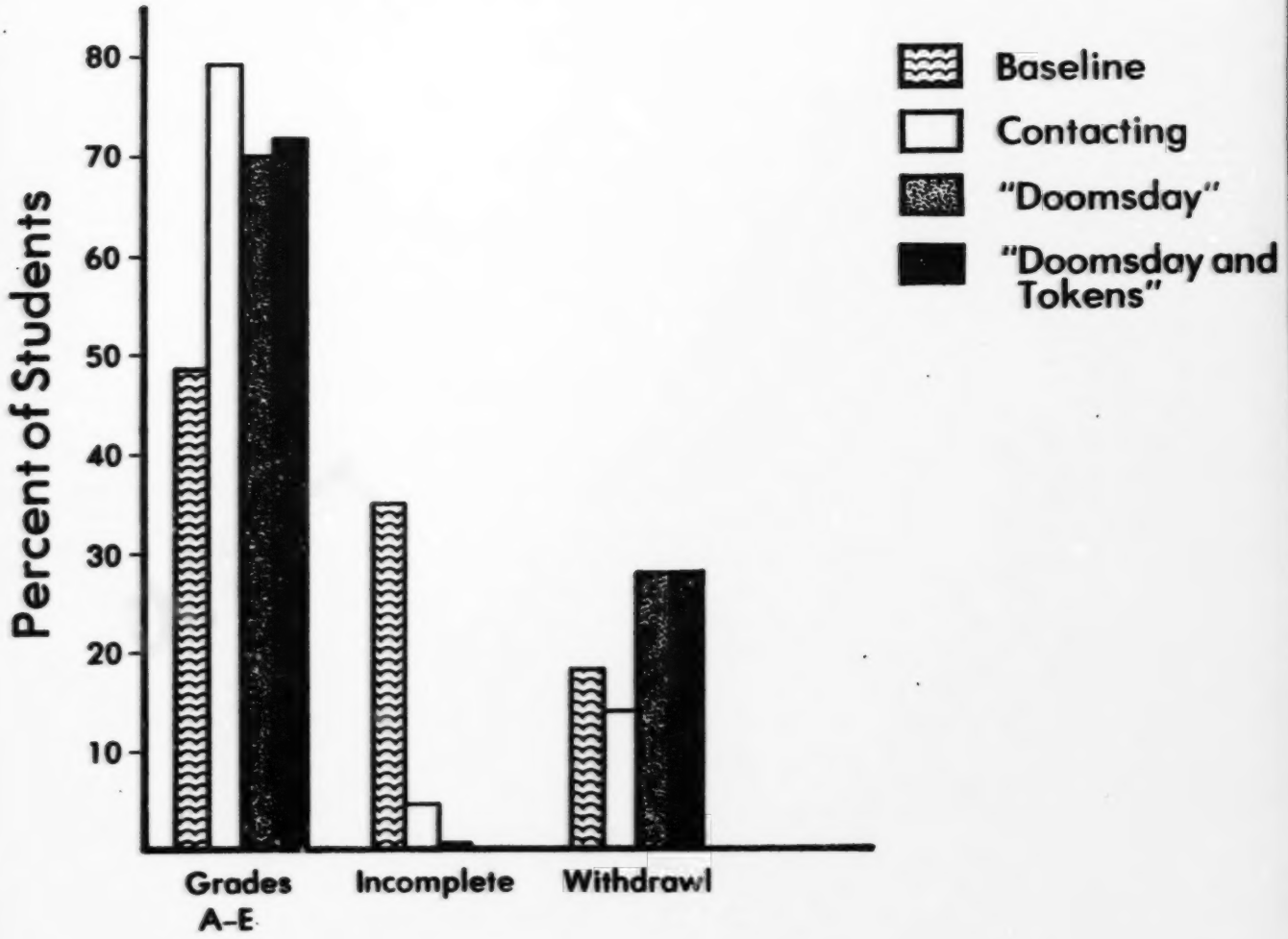
The sixth week measure of student progress showed a mean of 4.00 chapters completed for the Baseline group; for the Doomsday group, a mean of 3.78; for the Doomsday and Token group, a mean of 4.18; and for the Contracting group, a mean of 8.16. Figure 1 shows the student progress for the four conditions. The differences between groups were significant, $F(3,568) = 73.54$, $p < .001$.

The percentage of students who contracted and completed the course was significantly greater than that of those students who did not contract but completed the course, $\chi^2 = 8.73$, $p < .01$. The percent of students who withdrew from the course was greatest under the Doomsday conditions (28%), lower under the Baseline condition (18%), where individuals could request an incomplete, and lowest under the contracting condition (14%).

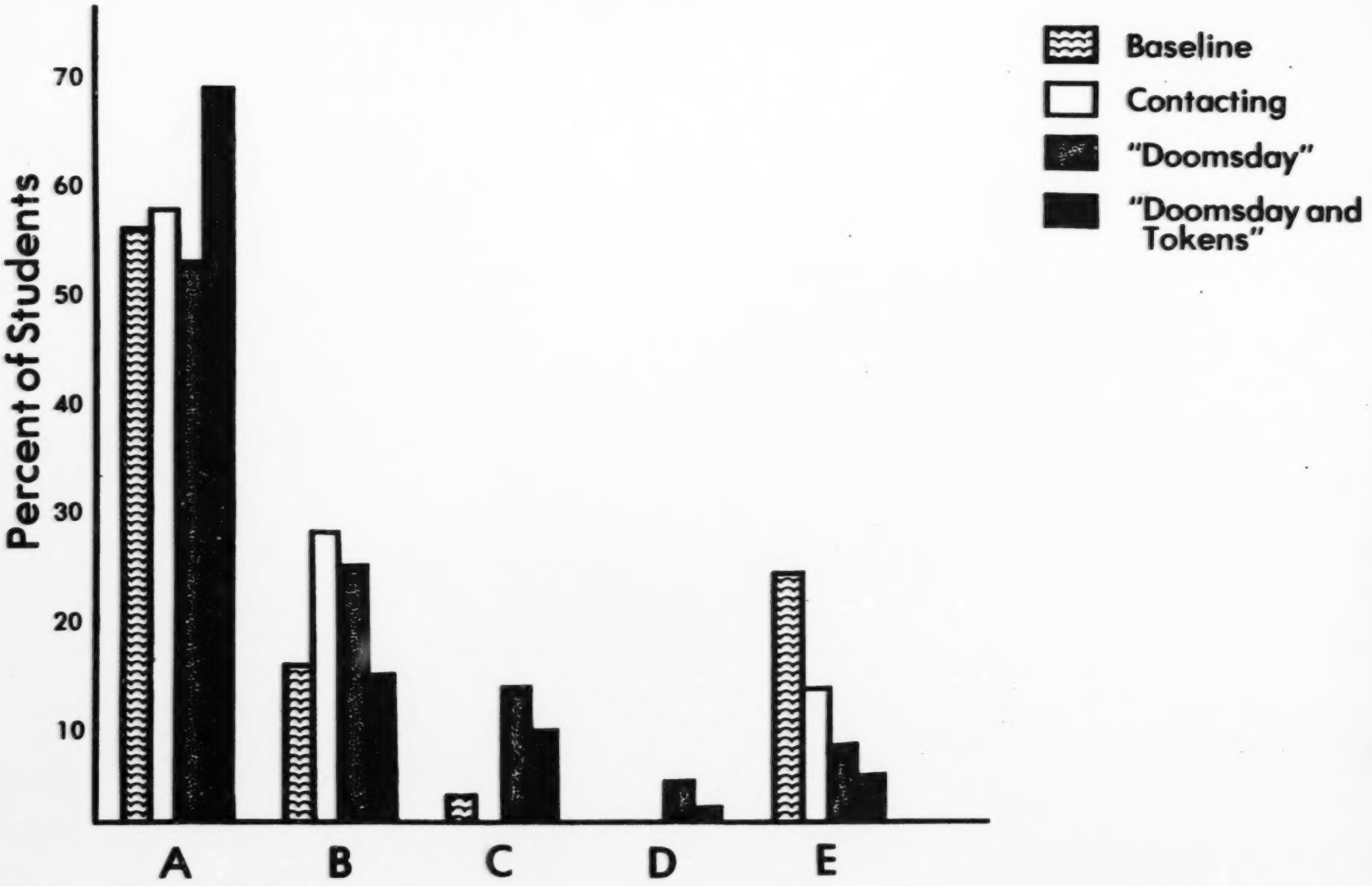
Compared to the Baseline condition, Contracting produced the greatest increase in student progress at midquarter. Both Doomsday conditions were effective in getting students started in the course and were easy to administer. Students in the Doomsday and Token condition started test taking earlier but did not maintain that advantage. At the end of the quarter, no differences in the grade distribution for students completing the course were observed. Contracting was effective in reducing procrastination and decreasing the percentage of students who withdraw (drop) the class. But given the time it takes to develop individual contracts, it is not cost effective as a motivating technique.


Baseline
Contracting
"Doomsday"
"Doomsday & Tokens"
Percent of Students
50
40
30
20
10
0-2
3-5
6-8
9-11
12-14
15-17
Number of Chapters Completed in 6 Weeks of Class

Grade Distribution



Final Grade Distribution



Final Grades (A–E) Distribution

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